

IN THE CLAIMS:

Please cancel claims 1-18 without prejudice or disclaimer to the subject matter therein. Please add new claims 19-30 as follows.

Claims 1-18 (Canceled)

19. A signal transmission apparatus comprising:

a modulator operable to modulate data for demodulation according to an m-level PSK and modulate a data stream according to an n-level PSK or an n-level QAM to produce modulated signals; and

a transmitter operable to transmit the modulated signals,

wherein said data for demodulation includes information representing the value of n.

20. A signal transmission apparatus according to claim 19, wherein m and n are integers, and m is equal to 2.

21. A signal receiving apparatus comprising:

a receiver operable to receive an input signal to produce a received signal; and

a demodulator operable to demodulate the received signal to produce data for demodulation and a data stream,

wherein said input signal has information of the data for demodulation and the data stream, said data for demodulation is assigned to an m-level PSK, said data stream is assigned to an n-level PSK or an n-level QAM, said data for demodulation includes information representing the value of n, and said data stream is produced according to said information representing the value of n.

22. A signal receiving apparatus according to claim 21, wherein m and n are integers, and m is equal to 2.

23. A signal transmission system comprising a signal transmission apparatus and a signal receiving apparatus,

said signal transmission apparatus comprising:

a modulator operable to modulate data for demodulation according to an m-level PSK and modulate a data stream according to an n-level PSK or an n-level QAM to produce modulated signals; and

- a transmitter operable to transmit the modulated signals,

said signal receiving apparatus comprising:

- a receiver operable to receive a transmitted signal to produce a received signal,

and

- a demodulator operable to demodulate the received signal to produce data for demodulation and a data stream,

wherein said data for demodulation includes information representing the value of n, and said data stream is produced according to said information representing the value of n.

24. A signal transmission system according to claim 23, wherein m and n are integers, and m is equal to 2.

25. A signal transmission method comprising:

modulating data for demodulation according to an m-level PSK and modulating a data stream according to an n-level PSK or an n-level QAM to produce modulated signals; and

transmitting the modulated signals,

wherein said data for demodulation includes information representing the value of n.

26. A signal transmission method according to claim 25, wherein m and n are integers, and m is equal to 2.

27. A signal receiving method comprising:
receiving an input signal to produce a received signal; and
demodulating the received signal to produce data for demodulation and a data stream,

wherein said input signal has information of the data for demodulation and the data stream, said data for demodulation is assigned to an m-level PSK, said data stream is assigned to an n-level PSK or an n-level QAM, said data for demodulation includes information representing the value of n, and said data stream is produced according to said information representing the value of n.

28. A signal receiving method according to claim 27, wherein m and n are integers, and m is equal to 2.

29. A signal transmission method comprising a signal transmission method and a signal receiving method,

said signal transmission method comprising:

modulating data for demodulation according to an m-level PSK and modulating a data stream according to an n-level PSK or an n-level QAM to produce modulated signals; and

- transmitting the modulated signals,

said signal receiving method comprising:

receiving a transmitted signal to produce a received signal, and
demodulating the received signal to produce data for demodulation and a data stream,

wherein said data for demodulation includes information representing the value of n, and said data stream is produced according to said information representing the value of n.

30. A signal transmission method according to claim 29, wherein m and n are integers, and m is equal to 2.